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SOME FEATURES OF GLAUCOMA IMPORTANT TO THE GENERAL PRACTITIONER.*

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In presenting a paper on this subject, it is far from my purpose to indulge in any criticism of the general practitioners, but rather to suggest an extension of their field of labor in harmony with their scientific attainments and well developed sense of professional responsibility.

On behalf of the ophthalmolgists, I must express our profound appreciation of the generous spirit of the general practitioners in turning over to us so completely practically all of their work in ophthalmology. Much of this practice they could handle with splendid satisfaction and with only a small amount of additional preparation and effort. I have many times heard some of my friends of the general profession proclaim that they did not undertake any kind of eye work. This is surely a very liberal attitude, but I am going to make an appeal to the general profession to share with us more of this work and more of the responsibility. I am convinced that this would redound to the credit of the medical profession and to the benefit of the public. A man who can fathom the deep seas of serology, neurology, and internal medicine could add a very helpful service to practical ophthalmology if he would only divest himself of the notion that the eye is clearly beyond the domain of his proper activities. The matter of differential diagnosis in ocular diseases is sometimes an imperative call upon the family physician. He is the only one, perhaps, in a position to warn the patient of the perils confronting him. He is the one who must initiate measures of relief or overcome the error of placid inaction. It is his knowledge of the prognosis in ocular affections that must give to the patient a measure of his danger and a measure of the reasonable hope he may cherish.

One of the most important ocular diseases involving the responsibility of the general practitioner is that of chronic glaucoma. Its significance depends upon the fact that it is exceedingly easy to confuse this condition with other intra-ocular changes not associated with pain or other distressing manifestations calling for immediate relief. Many times the patient depends upon his family physician to guide his conduct in the earlier stages of ocular affections, intending to submit his condition to an oculist at some later period. The great importance of chronic glaucoma, therefore, to the general practitioner hinges upon the fact that there may be some difficulty in the earlier stages in differentiating chronic simple glaucoma from some other conditions that do not demand such immediate attention. From a practical point of view, the mistake most frequently observed is in confusing a chronic simple glaucoma with incipient cataract or various changes in the fundus.

With reference to the first two conditions—chronic glaucoma and senile cataract—you might say that there are many points in the subjective manifestations that are quite similar, but the prognosis and treatment are so entirely different that an accurate differentiation is extremely necessary. In the first place, whatever ground is gained by a chronic glaucoma, as a rule, is permanently held, and, therefore, the important consideration is to prevent the advance of the glaucoma; whereas, in the matter of incipient cataract, uncomplicated, there is no great loss in the final result, even if there is considerable delay, and the patient may be able to secure perfectly useful vision whenever the lenticular opacities have advanced to a point that requires relief — in other words, glaucoma simplex requires early diagnosis and prompt attention to prevent

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irrevocable damage; whereas, senile cataract can be attended to at any time that the patient requires additional vision. In considering these two conditions, we might divide the subject into two divisions: first, the subjective manifestations, and, second, the objective manifestations.

SUBJECTIVE MANIFESTATIONS

Under this head, we might consider, first, the element of pain, or physical discomfort. In both of these conditions there is practically no pain at any time, unless there should supervene on the chronic glaucoma an acute or subacute process, in which case pain would certainly be present. There is in each case a great deal of diminution in vision, but the character of this diminished vision will be likely to show certain characteristic features in each case. In chronic glaucoma there may be, not only diminished vision for the point of fixation, but even in advance of this there may be a marked contraction of the visual fields, so that the patient may preserve central vision for an indefinite period, while his field of vision is steadily contracted down to the point of practical annihilation of the visual field without the patient being aware of such an impending calamity. Cases of this kind will frequently go for a change of glasses and they may find that it is still possible to secure for them fairly acute central vision, and on this account they may be led into the error of thinking that nothing of a serious nature is transpiring in the globe; whereas, the eye may be undergoing destructive changes that cannot be remedied. In senile cataract, however, there is more of a general dimness throughout the visual field, the central area not being more affected than the peripheral zones. It is true that the exact amount of visual disturbances in senile cataract will depend upon the special form of cataract which is present. In some forms the opacity is fairly evenly distributed throughout the substance of the lens, while in other cases it may be confined to certain areas of the lens and, consequently, the vision will be impaired, especially under those conditions in which the rays of light are forced to pass through the lenticular opacities. It is also to be observed that there are certain subjective visual sensations in both of these conditions that are worthy of regard. In the case of glaucoma, in the event there should be subacute or acute exacerbation, there would result certain modification in the dispersion of light, in consequence of which the rainbow rings, or haloes, would form around a lighted candle held at a distance. These subjective sensations are produced by a certain cloudiness of the cornea leading to the breaking up of white into its primary colors, or in producing elongations of the images formed by the entrance of light through the cloudy media. In the case of cataract, where the index of refraction is different in different sectors of the lens, it will be possible to have polyopia or multiple vision, due to the fact that this irregular refraction of the lens throws different images upon the retina. In neither of these conditions is there any notable inflammatory reaction or any discharge whatever. In each case, there is not much difference in the size, shape, or mobility of the pupil until visual acuity is reduced to a considerable degree.

OBJECTIVE MANIFESTATIONS

The objective manifestations are extremely important. In glaucoma simplex there would generally be a somewhat more shallow condition of the anterior chamber and the pupil would respond more sluggishly to the impressions of light. The ophthalmoscopic and perimetric examinations would constitute the most important features in the differential diagnosis. The ophthalmoscope would show a distinct recession in the plane of the lamina cribrosa. There would be the characteristic break in the retinal vessels as they would pass over the scleral rim of the optic disc. There would also be, as shown by the perimeter, a marked retraction of the visual field, and the dioptric media would remain clear; whereas, in developing cataract the dioptric media would be distinctly blurred, so that the details of the fundus could be less accurately outlined, but from the examination possible it would probably be easier to distinguish that there were no alterations in the nerve head itself, or in the blood vessels, but the fundus and the field of vision, as shown by the perimeter, would be unaltered. The intra-ocular tension, as determined by palpation, or a tonometer, would show no alteration whatever in the development of senile cataract; whereas, in glaucoma simplex, there would be a slight elevation in the tension, certainly at intervals, although there might be times when the intra-ocular tension would be normal. It is the slight increase in the intra-ocular pressure continuing for

a protracted period that explains the absence of pain and the diminished vision in glaucoma simplex.

In all of these cases, where it is desirable to make an ophthalmoscopic examination and a dilated pupil is to be obtained, it is necessary to use some myriatic whose action will rapidly disappear, such as euphthalmine, cocaine and homatropine, and, then, it is important to keep the patient under observation while the miotics are used to bring back the pupil to its normal size before allowing the patient to pass from observation, because whether the patient has already developed glaucoma or simply has a predisposition to it, the dilatation of the pupil may help to determine the onset of the condition, and, under such circumstances, a patient with senile cataract could have added to this malady, also, an attack of glaucoma. In all these cases, it is desirable to keep the patient under observation, because of the fact that the picture may change from time to time which would necessitate an alteration in the general management of the case.

It is beyond the purpose of this paper to enter into a discussion of the treatment, further than to state that in the case of glaucoma simplex, the treatment should be instituted at the very b e g i n n i n g and should consist either in the judicious employment of measures to reduce the tension by instillations of miotics, or recourse should be had to surgical measures intended to produce a freer filtration, these measures being especially the different forms of anterior sclerectomy.

With reference to senile cataract, the important consideration is that there is no necessity that the patient should be allowed to become blind with senile cataract in order to secure a successful result from operative procedures. The lens can be removed just as successfully at one period as at another, and the patient is entitled to the increased vision whenever he reaches a point where he is unable to discharge his usual duties of life.

ACUTE CONGESTIVE GLAUCOMA

Let us now study together the features of acute congestive glaucoma. Acute glaucoma is a condition of extreme importance, not only to the patient and the oculist, but the general practitioner as well, because the responsibility of making a correct diagnosis and instituting appropriate treatment, many times will devolve primarily upon the family physician. It falls to his lot ordinarily to see the patient first, and it is in the early stage of acute glaucoma that the greatest good can be accomplished by an accurate diagnosis and by judicious management. There is no other condition that requires so imperatively correct treatment from the beginnning, because, if incorrect management is employed, either in the way of active applications or a dilatory practice, disastrous results that cannot be overcome by any amount of subsequent diligence and care may speedily follow.

It is especially important that this condition should not be confounded with another condition with which, unfortunately, it is most likely to be confounded, namely, acute plastic iritis. The importance of this differentiation depends upon the fact that the treatment in these two conditions is diametrically opposed. In the case of acute congestive glaucoma, the great advantage to be sought is a speedy reduction in the tension, and this is accomplished most successfully by causing a marked contraction of the pupil, which results in pulling away the root of the iris from the filtration angle, thus opening up, to some extent, the spaces of Fontana and the Canal of Schlemm; while the object to be accomplished in acute plastic iritis is just the reverse—a speedy dilatation of the pupil to prevent permanent adhesions between the iris and the anterior capsule of the lens.

Let us now consider the important points of differentiation in diagnosis between acute congestive glaucoma and acute plastic iritis. The differential points may be considered under two general headings, the subjective manifestations and the objective manifestations.

SUBJECTIVE MANIFESTATIONS

1—Pain.—The pain in acute congestive glaucoma quite resembles that in acute plastic iritis inasmuch as the pain is distributed not only in the region of the eyeball and the orbit; but over the entire side of the head. However, the pain is much more acute in its character, much more rapid in its development, and much more extensive in its distribution in acute congestive glaucoma. It is frequently mistaken for a severe neuralgia, so the patient not infrequently comes to us with a history of having gone blind with neuralgia, when in reality he has gone blind with acute congestive glaucoma characterized by intense pain resembling neuralgia.

The constitutional manifestations are likewise more pronounced in acute glau-

coma. There may be a distinct depression with nausea and vomiting, which seldom occurs at the onset in acute iritis. In both of these conditions, the pain is deep-seated in character, because of the fact that it is produced by pressure upon the deep-seated sensory nerves of the globe, and is in marked contrast with the superficial, scratching pains that are present in conjunctival inflammation. While the pain is excruciating, the sensitiveness of the cornea to the touch of the finger is rapidly reduced in acute glaucoma, because of the paralyzing pressure upon the sensory nerves, but the sensitiveness of the cornea to the touch is preserved throughout the course of acute plastic iritis.

2—Vision.—The vision is speedily reduced, or actually annihilated, many times within a few hours, in cases of acute congestive glaucoma, on account of the rapid development of increased intra - ocular pressure interrupting the circulation within the globe, exerting marked pressure upon the optic nerve fibers as they come through the lamina cribrosa, and also by producing an edema of the cornea and a cloudiness of the other dioptric media. The vision in acute iritis is slightly diminished by the accumulation of plastic exudates in the line of vision,but this result does not rapidly supervene. In addition to the loss of central vision, there is frequently a reduction in the field of vision in acute glaucoma, which may be made out in the earliest stages of the trouble, particularly if there have ever been preceding acute attacks, or a preceding chronic glaucoma. This reduction in the field of vision may consist in a concentric limitation of the field with a special reduction on the nasal side, or with various forms of irregular scotomata. It may also be observed that in looking at a lighted lamp in a room, for instance, the patient may distinguish a kind of halo around the light somewhat resembling the appearance of a street light as looked at through a frosted window pane on a winter night. This halo is due to the cloudiness of the cornea produced by the edema consequent upon the intra-ocular pressure, and it may assume the appearance of rainbow rings around the light.

3—Discharge—There is no purulent, or muco-purulent discharge, as an essential feature of either acute glaucoma or acute iritis, because the pathological process is intra-ocular r a t h e r than extra-ocular. However, there is in both instances a profuse flow of tears.

OBJECTIVE MANIFESTATIONS

In both of these diseases the eye is intensely red, but in acute glaucoma there is a more marked distinctness of the episcleral veins and anterior ciliary viens, so that they stand out in bold relief because of the interference with the return circulation occasioned by the intra-ocular pressure. The eye assumes a kind of purplish hue on account of the venous stasis. In acute iritis there is more of a diffused pink color surrounding the limbus and extending over the globe. In acute glaucoma the cornea rapidly assumes a steamy appearance, resembling a pane of glass that has been breathed upon, while in acute iritis the cornea remains perfectly clear. The pupil in both cases is relatively immoblie, but is especially so in acute glaucoma, and in this condition is widely dilated, while in acute iritis the pupil is inactive but contracted, unless a mydriatic has been used, in which case the iris will show adhesions to the anterior capsule of the lens, giving an irregular outline to the margins of the pupil. The anterior chamber in acute glaucoma is much shallower than normal and may be entirely obliterated, the iris and the lens pressing against the cornea, while in acute iritis the depth of the anterior chamber is unaltered. If the media are sufficiently clear to permit of an ophthalmoscopic examination, the fundus in acute glaucoma will show some reduction in the caliber of the retinal arteries, with a marked increase in the caliber of the retinal veins, which are distinctly tortuous in their course, on account of the interference with the return circulation. There may be hemorrhages, also, especially of the venous type in acute glaucoma, and these are unusual in acute iritis. The optic discs, in acute glaucoma, if the condition has supervened upon a more or less chronic trouble, will show a marked excavation which is total in character and presents characteristic features that distinguish it from other forms of excavation of the optic disc. The entire lamina cribrosa is pushed backward by the intra-ocular pressure, so that the retinal vessels appear broken in their course over the rim of the sclera, while in atrophy of the optic nerve, there is a pallor of the disc and a slight diminution in the prominence of the disc, but with no actual recession of the lamina cribrosa. In a physiological excavation of the optic disc, the central

portion may appear deeply excavated, while the peripheral portions, containing the normal number of normal optic nerve fibers, will show no such depression.

The essential condition of acute congestive glaucoma is the increase in intra-ocular pressure, and upon this one circumstance develop all of the symptoms enumerated. The eyeball may vary in hardness from a very small increase, capable of being appreciated by the touch, to those cases of extreme hardness in which the eyeball is apparently hard as marble. This intra-ocular pressure is variously estimated, by palpation with the fingers, or, more accurately, by a tonometer, which measures in millimeters of mercury the intra-ocular tension. In acute plastic iritis there is no increase of importance in the intra-ocular pressure.

If I should utter a single sentence that would emphasize most the dangers of this condition, I would say that whenever a patient becomes suddenly blinded, or has his vision rapidly reduced, associated with pain radiating to the brow, the temple, and the side of the head, with a dilated pupil, with a shallow anterior chamber, with haloes around the light, and with increased intra-ocular pressure, caution the patient to secure at once not dilatation of the pupil, but a contraction of the pupil, and follow this up with a careful investigation into the exact condition. Finally, in all cases of diminished vision, no time should be lost in ascertaining, as accurately as possible, the exact situation, so that remedial measures may be adopted promptly and not indefinitely postponed in the vague hope of better days.

It is a matter of the utmost humanitarism and economic importance to secure vision for a patient when it is possible to do so rather than have the patient spend the final years of life in the fruitless waiting for complete blindness. This protracted delay simply results in the loss of general physical strength and endurance, so that when the patient finally reaches the stage of complete blindness he may be so enfeebled by the various infirmities of age that he is not in so favorable a condition for any kind of operation, and has such a poor remnant of life left that he may not have the courage and confidence and strength to undergo an operation for the restoration of sight, and thus, hesitating on the brink of the grave, passes on from the darkness of this world into the deeper darkness of the great unknown.

THE CARE OF CRIPPLED CHILDREN IN OKLAHOMA*

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Rehabilitation of the cripple is a fascinating and worthy enterprise which has attracted the interest of civic clubs and organizations anxious to accomplish some unselfish good to humanity.

Popularity of the movement began in 1916 when a Rotary club in Ohio became interested in a twelve year old boy with prenatal amputation of arms and legs. The result of their efforts was a state society for crippled children and a state law providing for special facilities of treatment and education. At the present time, more states have enacted special legislation and there are over fourteen state societies for the relief of crippled children.

While the social clubs are to be given credit for promotion and execution of this work, it should be recognized that the basis on which they have worked, is the attainments of the medical profession.

The object of this paper, therefore, is to place before the profession first hand information of the present status of the crippled children's movement in this State.

It is hoped that the physicians in each locality will feel their responsibility in helping to construct, perfect and direct this movement so that it will remain non-sectarian and non-political but medically controlled. What a great opportunity to demonstrate the charitableness of the profession.

It is estimated that there are over 7,500 crippled children under 21 years in Oklahoma. Where clinics have been held, it is surprising to all concerned how many cripples there are in the community, and how few can afford to pay for treatment.

The movement in Oklahoma was started in 1920 by the Oklahoma City Rotary club. Through the activity of their boys' work committee, several crippled boys were operated upon and the results were so spectacular to the layman's mind that enthusiasm soon spread.

In 1922, the Andrew Parsons school for cripples was organized as a part of the

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Oklahoma City public school system by the superintendent whose name it bears.

In 1923, the legislature passed a law which makes it possible for the juvenile judge in any county to commit indigent crippled or defective children under 18 years to the University Hospital for free treatment.

Early in 1924, the Oklahoma State Public Health Association added a "Crippled Children's Division" to its activities. With the aid of orthopedic surgeons and physicians in each locality, clinics were held in various cities in the state. The number of children coming to these clinics was so surprisingly great that state-wide interest soon became apparent. Civic clubs throughout the state began to request clinics. The Rotary club at Ardmore undertook the work on a large scale. Seventy-five children were examined the first day. The efforts of this one club has resulted in over 150 children being examined, 70 of which have received surgical or other treatment. In 1925, the Shrine hospitals were opened and Oklahoma children immediately began to apply for admission.

Due to the intense interest in the work and because so many different agencies were attempting the same work, it became necessary to formulate some plan whereby all working units could be brought together under one head and thus on September 24, 1925, the State Society for Crippled Children was organized.

The object of this Society is to:

1. Find the cripples.
2. Bring them medical, surgical and hospital, also social service care.
3. Educate them in school, home or hospital.
4. Follow up the cases until self supporting.
5. Lead State to more effecient government program.

Clinics have been held at: El Reno, Clinton, Nowata, Bartlesville, Cushing, Ardmore, Stillwater, Chickasha, Kingfisher, Waurika, Duncan, Poteau, Stigler, Sallisaw, Pawnee, Pawhuska, McAlester, Bristow, Chandler, Sapulpa, Guthrie, Cleveland, Drumright, Shawnee, Norman, Lawton, Muskogee and many other cities.

These clinics are limited to those physically handicapped by deformity or disabled by physical malformations and defects. They exclude the diseases of the internal organs and the blind or deaf. Many such cases, however, come anyway and are examined.

Age is not strictly limited. In fact, one very important feature is the possibility of rehabilitation of disabled young adults through the medium of the vocational rehabilitation act of the Federal government which was passed June 2, 1920. Under this act the Federal government provides the state with a sum of money which must be matched by the State and handled by the State Board for vocational education. Unfortunately, Oklahoma has not matched this fund but the State director is aiding materially in the clinics and managing to help many individuals to receive treatment and education.

Records of the clinics show that infantile paralysis is the most frequent cause of deformity. Next in frequency is, spastic paralysis. In this group are always a great number of imbeciles and feeble minded for which nothing can be done except advise as to care.

A very noticable feature of these clinics is the scarcity of rickets and joint tuberculosis. The frequency of these two groups is much greater in the large eastern cities. In Chicago, 7 per cent of 1500 cases examined was tuberculosis.

While the following table is a tabulation of only a portion of cases examined, it represents the percentages as generally found in all clinics.

	Cases	Percent
Total number of cases	702	
Total number of clinics	20	
Total number of counties	17	
Infantile paralysis	193	27.4%
Spastic paralysis	110	15.6%
Congenital club foot	35	5. %
Tubercular joints	28	3.9%
Osteomyelitis	21	2.9%
Fracture and traumatic	20	2.8%
Cleft lips and palate	18	2.5%
Arthritis	16	2.2%
Bowleg and knock knees	10	1.2%
Congenital dislocation hips	7	.9%
Weak arches	7	.9%
Congenital malformations	7	.9%
Burn contractions	6	.8%
Obstetrical paralysis	4	.5%
Tortocollis	4	.5%
Idiopathic scoliosis	4	.5%
Hernias	3	.4%
Miscellaneous orthopedic	45	6.4%
Miscellaneous non-orthopedic	164	23.3%
Cases that can be definitely improved by orthopedic treatment	358	50.9%

The work of the society has only begun. It is rapidly creating state wide interest in rehabilitation of the cripple. Adequate hospital and school accommodations will soon become a real problem. At present, legislation provides only one means of institutional accommodation. This is the State hospital located over 200 miles from some parts of the state and primarily a general hospital. It has served well so far, but the time has arrived when one centralized hospital is no longer sufficient accommodation for these orthopedic cases.

The greatest number of cases can be reached by taking the surgery to the child. It is conceded, of course, that the majority of these cases must fall to the lot of the othopedic surgeons. There are many good modern hospitals throughout the State and either orthopedic centers will have to be established where orthopedic surgeons of known experience and judgment can be in control of the work, or a mobile unit will have to be provided which can work from one hospital to the other.

At the clinics, the hopes of the parents are built up and operations are recommended. It is difficult in many instances to overcome the natural fear of surgery. If on top of this the parents know that they will have to send their child miles away, it is entirely out of the question with a great many.

In several instances, it has been found that parents too poor to pay surgical or hospital fees, have spent more than these would amount to, for railroad fare and board and room so that they could be near their child.

Another great problem confronting this society is the after care and education. The law should provide specially trained orthopedic nurses to investigate post-operative cases. It should also provide for a special department and teacher in every public school where 10 or more crippled children are in attendance.

CONCLUSION

1. The bringing to light of hundreds of crippled children in the State of Oklahoma is a movement of tremendous economic value as well as a true humanitarian activity.

2. Through the accomplishments of medical science, the attitude towards cripples has been changed from that of scorn, superstition and pity to that of respect, recognition and title.

Note: Since the above article was written special legislation has been enacted appropriating funds for the erection of a children's hospital in connection with the State University Hospital, and the law providing for the care of indigent crippled children changed so that other hospitals than the University hospital will be permitted to care for these cases. Under the law, all hospitals or orthopedic surgery will have to be approved by the faculty of the medical school. It carries a tenth mill county tax to create a fund for the aid of crippled children. The surgeons will receive no pay, but the hospitals will receive $15.00 per week to cover cost of all materials, braces, and other costs of treating the patient.

THE PERINEAL PROSTATECTOMY*

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The surgery of the aged is fraught with many difficulties, most of which center around defects of the kidneys and cardiovascular system. This being true, any pains taken to reduce the amount of shock in operations on old people is well worth while. However, self-evident these statements may be, the fact remains that in prostatic surgery the medical profession appears to disregard them and to follow the most dangerous way for the patient. There is a nationwide mortality in operations for hypertrophied prostates of around ten per cent. The very best available figures for the suprapubic operation show a mortality of six per cent and over, while the best available figures for the perineal operation reveal a mortality of 3.1 per cent or exactly one-half the rate of the suprapubic operation. Yet in spite of this greatly lessened death rate, the suprapubic operation is almost universally used.

It is my desire today to present a small series of ten cases who have been operated upon by me by the perineal operation of Dr. Hugh H. Young, within the past nine months, all of whom have recovered, and none of whom at any time were in the slightest danger of death or even of suffering any more pain or inconvenience than they suffered before operation. These patients were all operated in the department of urology at the University hospital, and I am indebted to Drs. Wallace, Bolend and Taylor for their kind co-operation and assistance. Schematically the cases are as follows (Fig. 1):

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TEN PERINEAL PROSTATECTOMIES

No.	Age	Residual	Blood Chem.	B. Press.	Preoperative Complicating Conditions	Operation (Stages)	Postoperative: Continent in	Postoperative: Wound Healed in	Results
1	82	3. oz.	38.2 NPN 17.8 UN	120 60	Age; carcinoma of prostate.	2 (Later Keys Operation)	7 mos.	30 da.	Cured.
2	60	4. oz.	32.1 NPN 15.8 UN	100 60	Anemia 3,600,000; large bilateral hernias; large right hydrocele.	2	42 da	Still open (Rectal inj)	Cured, except for pinhole fist.
3	73	6. oz.	28.5 NPN 13.9 UN	160 90	Nephrolithiasis; pyelitis; bladderstone.	2	22 da.	42 da.	Cured.
4	69	3.8 oz.	10.0 NPN 42.5 UN	126 68	Severe urinary retention. (Cautery punch wice.)	1(s)	24 da	24 da.	Cured.
5	71	2. oz.	46. NPN 14. UN	(?)	Very feeble and asthenic.	1	14 da.	28 da.	Cured.
6	61	(?)	47.6 NPN 14.1 UN	120 75	Large ventral hernia with infected fistula from bladder in it	2	16 da	32 da.	Cured.
7	56	4. oz.	36.1 NPN 12.6 UN	140 78	None except poor mental attitude.	1	7 da.	29 da.	Cured (Epididymitis)
8	60	1. oz.	40.6 NPN 23.3 UN	100 62	Large right inguinal hernia	1	25 da.	30 da.	Cured (Epididymitis)
9	66	1.5 oz.	32.3 NPN 14. UN	130 88	Cardiac lesion	1(s)	16 da.	16 da	Cured.
10	63	2. oz.	42.8 NPN 17.28UN	114 72	None	1(s)	16 da.	20 da.	Cured.

Fig. 1. (S) Sacral anesthesia.

It will be observed that only four of these cases were operated in two stages. One of these had the bladder opened for the removal of a large stone, and the other three were drained preparatory to suprapubic operation before they fell into my hands. In three cases, however, the fistula had closed before I did the perineal operation, and the patients had not at any time gotten into good enough condition to warrant the enucleation of the prostate through the bladder. All the other six were operated in one stage through the perineum. Seven of them were given general anesthetics, and three were operated under sacral anesthesia, which to my mind is the method of choice, and is a perfect method of anesthesia when the technique is carried out strictly. One patient was eighty-two years of age and very weak; one had a large stone in the bladder and two other stones in the left kidney; two had extremely large bilateral inguinal hernias; one had a heart lesion with a history of decompensation; one had a very large ventral hernia in the lower part of which was an infected sinus leading to the bladder; two others were so feeble and septic that it was the opinion of all consultants that they could not stand an ordinary prostatectomy; and two were apparently in fair enough condition to stand a two stage suprapubic operation. In other words, out of the ten cases, only two could have been called fair risks from an operative standpoint.

The results in these cases may be stated as follows: Nine have recovered completely, the wounds closing in from two to four weeks. One has recovered except for a small recto-urethral fistula which he refuses to have repaired because it does not trouble him enough. The injury to the rectum was due entirely to improper arrangement of the operating table, which made it difficult to see just what I was doing. I feel perfectly certain that such an injury will not happen again, and I also know that I can repair that one under sacral anesthesia with very little suffering or loss of time to the patient if he will return to the hospital.

During convalescence two of the patients developed an acute epididymitis which lasted about one week and subsided without further trouble.

Only one case showed any incontinence following operation, and that was the eighty-two year old man. After letting him go for awhile I dissected the scar tissue loose and repaired the perineum by the Keys method and he promptly regained control and went home well.

None of these cases showed at any time any shock or undue hemorrhage, as can be seen from the following pulse and temperature charts. (Fig. 2)

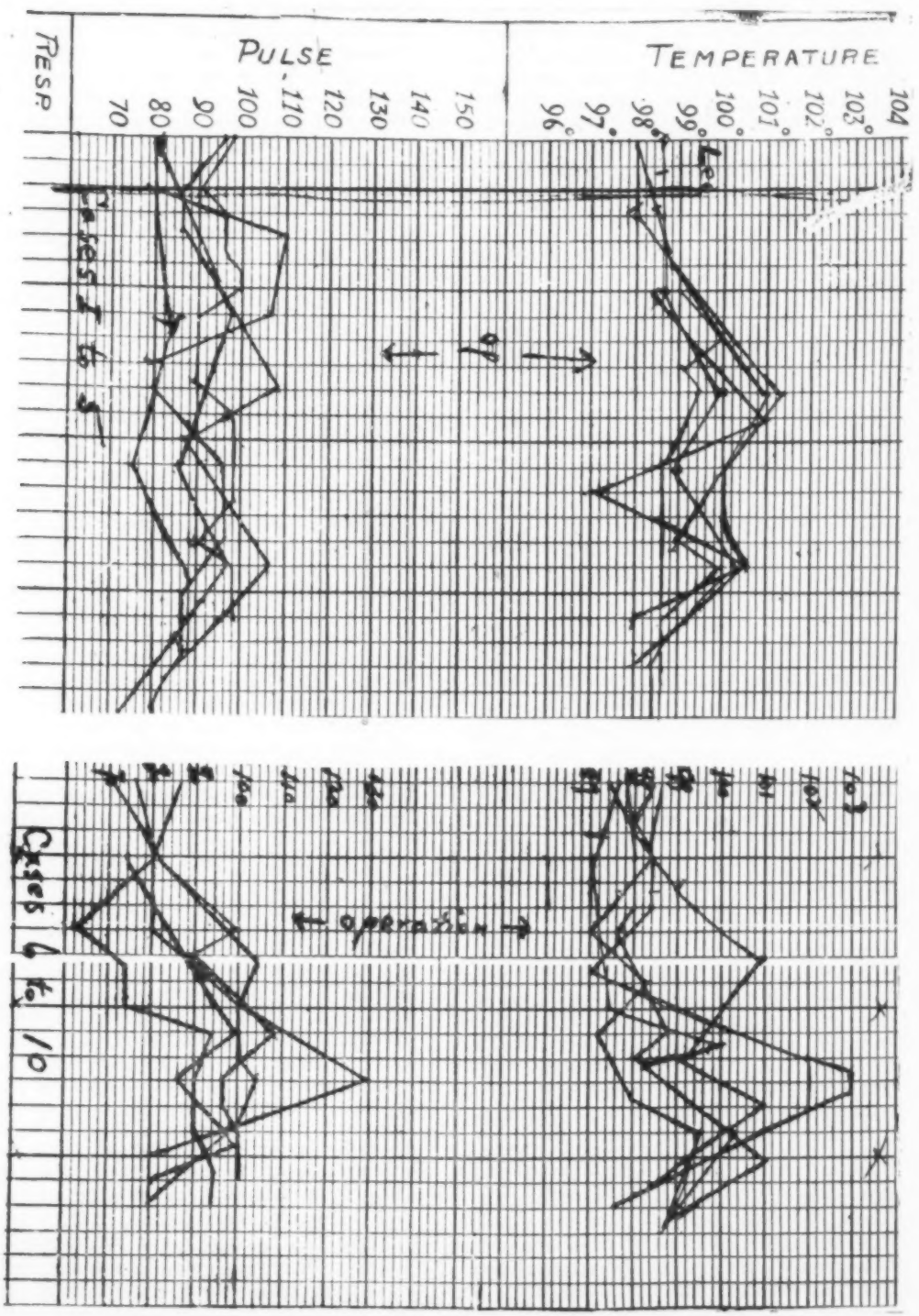
RESP.
PULSE
70
80
90
100
110
120
130
140
150
TEMPERATURE
96°
97°
98°
99°
100°
101°
102°
103°
104
Rest to
operation
Cases 6 to 10

FIGURE II

DIAGNOSIS

From the standpoint of safety to the patient there are certain things to know about his condition besides the mere fact that he is suffering from urinary obstruction. We must determine, if possible, two things:

(1) The shape, size and consistency of the prostate, and direction of greatest enlargement.

(2) The amount of urinary retention and loss of functional efficiency of his kidneys.

The first points can be determined by rectal examination and cystoscopy. Many times rectal examination reveals comparatively little while inspection of the interior of the bladder will show a large intravesicular mass which towers up above the floor of the bladder. The consistency can be determined by bimanual examination, with one finger in the rectum and the cystoscope in the bladder. In carcinoma the mass is usually hard and adherent to the rectum and sides of the pelvis, whereas in benign conditions it is moderately firm but soft. The dividing line between benign and malignant is dangerous territory to be dogmatic about, and in case of doubt it is my judgment that enucleation should be undertaken. To say that a diagnosis of malignancy can be established or disproved by a sugar tolerance test or other laboratory test is foolishness; and certainly no one will maintain that he can tell for certain merely by the feel except in far advanced cases. Since the best authorities teach that from ten to twenty percent of all prostatic tumors are malignant, it is best to consider all of them as dangerous and to remove them as soon as they cause sufficient symptoms to justify operation.

The amount of urinary retention can be determined by catheterizing after the patient has voided all he can. If there is as much as 300 or 400 c.c.'s he is getting on dangerous ground and should be considered as one who needs attention. In a clinical sense residual urine is the measure of back pressure on the kidneys, because there can be little residual unless there is intravesical bulging of the prostate, and the more bulging the more residual. Likewise, however, the more bulging the more rigid the internal sphincter becomes and the greater the trigonal muscles hypertrophy, which in turn block the openings of the ureters and cause back pressure on the kidneys. The amount of kidney reserve is a very important matter and must be determined before operation, if possible. The two methods that have been developed in the last few years and have proved to be of value are the Phenolsulphonephthalein test and chemical examination of the blood for retained urinary products. Any good kidney ought to begin excreting PSP dye in eight to ten minutes after injection, and ought to excrete fifty per cent or more the first hour. It has been shown, however, that excretion beginning in fifteen minutes and excreting as much as thirty per cent the first hour indicates that the kidneys will stand operation fairly well in the absence of other complications. Blood chemistry usually reveals urinary retention in inverse ratio to functional efficiency of the kidneys, and therefore ought to be taken in all cases. It has been shown by Young and others that a blood urea of fifty mgms per 100 c.c.'s is not too high for successful operation, though any figure above this is on the borderline of danger. The lower this figure can be gotten, the better.

The presence of infection is another matter to be determined beforehand. It is decidedly poor surgery to open up large areas of raw surface in the presence of severe infection, when by preliminary treatment this can be reduced in intensity. The presence of pus or of foul smelling alkaline urine is clear evidence of infection in the bladder and urethra, and the absence of these elements indicates that the field of operation is clean. Infection in the ureters or kidney pelves can only be determined definitely by cystoscopy.

In arriving at an opinion as to the safety of operation at any given time it is well to remember that it has been shown that even a low PSP that is fixed is better than one in which the percentage fluctuates widely at different tests. Fluctuating functional efficiency means an irritable kidney and a dangerous one; while a fixed rate of excretory ability means that the kidney lesion has reached a quiescent stage and is not likely to flare up under the provocation of a heavy operation. It is well to defer operation in all cases until such a state of equilibrium is reached in both the PSP and blood urea determinations.

PRELIMINARY TREATMENT

This may be outlined very simply and easily. The whole principle is to gradually decompress the kidneys by relieving the residual urine and providing a means of free drainage so that the sudden open-

ing up of the bladder at operation will not throw the patient into a state of uremic shock which he cannot survive. The first thing to do in all cases is to install a retention catheter as soon as it is safe to do so. If there is a large amount of residual urine or if there is acute urinary retention this cannot be done until the urine has been gradually removed over several days. In some clinics this is done by intermittent catheterization of small amounts—five or ten ounces every hour in acute retention, leaving the catheter in but closing it up between intervals. In moderately large amounts of residual urine it is safe to draw off all the urine once or twice a day for three days, then insert the retention catheter. All cases meanwhile should be placed on a forced water diet of at least one glass per hour. In large residuals Dr. Young places a retention catheter with a long tube which is elevated so that the bladder empties uphill. Then he forces water to the extent of five or six litres daily, gradually lowering the tube until the patient can stand free drainage. By this plan of procedure he has obtained marvelous results,—many cases coming into the hospital in a state of coma and surviving to be operated on safely. By taking daily blood chemistry determinations the progress of the patient can be watched with almost mathematical accuracy.

Retention catheters should be removed every three or four days and left out for six hours, while the bladder should be irrigated daily with boric acid solution or other mild disinfectant. Infection is always present to a small degree and these measures help to keep it to a minimum. On the day of operation it is well to wash the bladder thoroughly with the same solution just prior to operation. In unconscious cases water should be given per rectum, subcutaneously, and by gastric lavage. The urine should be kept alkaline by the administration of sodium bicarbonate along with the water. Cases complicated by high blood pressure, cardiac lesions or other extrarenal pathology, should be handled in accordance with medical common sense until fit for surgical intervention. In general it may be said that a prostatectomy properly done is no harder on the patient than any other major operation.

TECHNIQUE (Figs. 3 to 18.)

Probably you are all familiar with the general principles of the technique. In brief, however, it is this: The patient is placed in an exaggerated lithotomy position, with the knees brought well up to the chest. His perineum is then elevated by a sand bag and the entire table is tipped backward so as to bring the perineum almost level. This position is maintained by rigid shoulder braces which prevent the patient from slipping away from the operator. Under anesthesia, preferably sacral, a curved U-shaped incision is made across the perineum running from the outer border of each ischiorectal fossa to the other, with the middle of the incision about one inch anterior to the anus. The incision is not made, however, until a moderately large sound has been passed into the prostatic urethra and held by an assistant. By blunt dissection with the fingers the incision is deepened on each side until the fingers meet under the central perineal tendon, which is then cut and retracted. This exposes the rectourethralis muscle, which is gently dissected apart by the finger covered with gauze. This exposes the membranous urethra and the apex of the prostate. Just now the sound should be passed into the bladder, which throws the prostate downward into the wound, where, with the triangular ligament retracted forward and the rectum backward, the gauze dissection can be continued until the entire posterior surface of the gland is cleaned off and comes into perfect view. This dissection is continued until the whitish second layer of Denonvilliers' fascia appears, which is the true capsule of the prostate. Now, with all bleeders stopped, a median incision is made in the posterior portion of the apex of the prostate about one-half inch long until the urethral sound shows through. This incision is lengthened until each side of the urethra can be grasped with Allis forceps, the sound is withdrawn, and Young's prostatic rectractor is slipped into the bladder through this opening. The blades of the retractor are opened out and the prostate is pulled down into the wound for enucleation. The next step is to open into the prostatic capsule and shell out the adenomatous tissue, and for this purpose I have used the inverted V incision of Young, turning the floor of the urethra downward, and enucleating each lateral lobe first, then the posterior one. A finger is then inserted into the bladder and swept round and round until the operator is assured that all the adenomatous masses are removed, then a Davis modified Pilcher bag is inserted and filled with 75

c.c. of sterile water. Gentle pressure on the bag will stop all ordinary bleeding, after which the wound is closed with interrupted silkworm gut sutures.

POSTOPERATIVE TREATMENT

The inflated bag is deflated twelve hours after operation and if there is no bleeding it is removed in twenty-four hours by simply cutting one suture and pulling it out. This is perhaps the most painful part of the entire operation, if I may believe what these patients have said, —though it is not great, and is over in an instant. At the end of a week water is forced through the anterior urethra and out the wound by an ordinary syringe, and if it will not go a sound is gently passed into the membranous urethra to open up the point of adhesion. Urine drains through the wound for two to three weeks then ceases as the perineal fistula closes. The patient gets up on the fourth or fifth day and then is able to change his own dressings often enough to keep dry. As a matter of fact there is no real reason why he could not go home and convalesce after ten days have elapsed, provided he could report to the doctor once a week for observation.

COMPLICATIONS, DANGERS, ETC.

The only complication that is to be feared is epididymitis, and so far as my own observation has gone, it is as common after suprapubic operations as after perineal ones. There have been two cases among this series, who ran a fever and had an enlarged scrotum for about a week, then it subsided and there was an end to it. I do not consider this a complication of any particular importance. There has been a great deal of criticism of this operation in the past on the ground that it was more likely to be followed by incontinence, rectal injuries and permanent urinary fistulæ, than the suprapubic method. If I may be permitted to say so, it is my frank opinion that any surgeon whose operations are followed by these sequelæ simply does not do the operation correctly. The only case of incontinence I had was the very first one I did, and the patient was eighty-two years old at that. After I allowed him to go home and fatten up and he still was incontinent, I dissected the scar tissue from between the rectum and urethra and brought the levator ani muscles together in the midline, as described by Keys, and he promptly got well. In this case the trouble was that I dissected too far forward on the urethra and the external sphincter muscles were caught in the scar while healing. After I learned the anatomical bearings of the male perineum I had absolutely no further trouble. The same can be said of the case who had a fistula. This was caused by my assistant pressing down on the rectum too hard with the retractor in order to help me to find the urethra,—which would have been entirely unnecessary if we had placed the patient properly on the table. All this we have now learned, and consequently do not fear at all.

On the other hand, there are numerous advantages to this operation which are not usually stressed. First, it can be done under sacral anesthesia without any pain at all, which is a great advantage when we are dealing with very feeble patients or those who have cardiac or pulmonary complications. Second, it causes practically no shock, as you will see from the diagram of pulse and temperature following operation in these cases. Third, there is absolutely no danger of primary hemorrhage, because all the work is done in plain view and the vessels can be ligated. Also, the Davis bag gives a much better downward pressure against the bleeding area than the Hagner bag with its outlet running through the urethra. Fourth, there is less danger of trauma to the bladder and the prostatic urethra by the perineal operation than by the blind suprapubic enucleation. Fifth, this method keeps the patient in the hospital a much shorter time than the two stage suprapubic, and causes much less pain to the patient. The pain from a suprapubic incision is as great as that from any other abdominal incision, and after urine drains out of the wound for a time it becomes raw and irritated and is painful for weeks afterward. Some of these patients came through without a single hypodermic. Lastly, one operation does the work and the patient is cured, whereas, by any other method he must have the unpleasant prospect of looking forward to a deadly and serious operation later, where even in selected cases one out of ten will die. By this method we can assure the patient that he will suffer little or no pain during or after the operation, that he will have only one operation and will be away from home only three or four weeks at the longest, that he will be in bed only about four days of that time, that he can keep himself clean and comfortable, and that he has as good a chance of living as he would have if he were merely having his appendix or tonsils out.

ACUTE NON-TUBERCULOUS ILIO-PSOAS ABSCESS*

LEROY LONG
AND
LEROY DOWNING LONG
OKLAHOMA CITY

Our remarks shall be confined to one particular type of extraperitoneal infection—namely that produced by pyogenic organisms in or about the ilio-psoas muscle, usually terminating in abscess formation.

All purulent collections in and about the ilio-psoas are not due to secondary involvement through the inclined plane and gravity, but may be the result of primary involvement of this muscle..

One of us, Doctor LeRoy Long, has studied this condition for several years, and his observations lead us to believe that abscess formation due to pyogenic organisms may, and frequently does, occur in and about the ilio-psoas as an independent process. In a communication read before the Surgical Section of the Southern Medical Association in November, 1924, and published in the Southern Medical Journal in March, 1925, he reported the histories in a series of 6 patients and the data in connection with these reports seem to establish the truth of our belief that this condition may be regarded as a clinical entity.

In all these cases there was early, definite and permanent recovery after the abscesses were surgically drained, with the exception of one patient, a boy 17 years of age, about whom there was some doubt because of prolonged convalescence. The infecting organism was staphylococcus aureus in 3 cases, staphylococcus albus and streptococcus in one case, and streptococcus in one case. In one case there is no record of the organism. Four of these cases were in boys from 5 to 11 years of age and the abscess was located on the right side. The doubtful case, in the boy of 17 years, had the abscess on the left side—the organism being staphylococcus aureus. One case was that of a woman 29 years of age, the abscess following confinement and developing on the left side, the organism being streptococcus. There was a history of trauma in two cases and of furunculosis in one case.

All of the patients reported in the series had been ill for at least several weeks before they were seen and in each instance the abscess was fully developed when the patient was first seen.

After abscess formation there is a strikingly uniform clinical picture characterized by:

(1) Moderate pain about the inguinocrural region and lower abdomen.

(2) A tender mass of recent formation on the inner side of outer Poupart's or iliac crest.

(3) Flexion deformity of the thigh.

(4) Remittent fever.

(5) High leukocytosis.

(6) Emaciation and weakness.

In November, 1925, we had the opportunity to study and operate upon a patient during the *developmental* period of abscess formation in the right ilio-psoas region, and the observations made at that time seem to conclusively establish our belief that acute pyogenic abscess may develop in the ilio-psoas region independent of extension, by continuity or contiguity, from neighboring areas as for example the pelvic, perispinal, perirenal, appendiceal or other adjacent regions.

We submit a brief resume of this case which was seen *before* there was full development of the abscess:

Boy of 8 years, referred by Doctor William Taylor, November 13, 1925. He had been feeling badly for about 10 days with fever, loss of weight, and tenderness and soreness in the right groin and lower right loin. There was no evidence of gastro-intestinal or urinary tract involvement. There was no history of trauma or of known infective foci. The chest was normal. The liver, spleen, and kidneys could not be palpated. X-ray of spine and pelvis did not show any skeletal pathology. There was temperature of 102°F., no anemia, w.b.c., 27,450 with 74 per cent neutrophiles. Urine normal.

There was exquisite tenderness on the inner side of crest of anterior superior spinous process and extending backward and upward almost to the erector spinæ region.

We were not able to entirely exclude perirenal infection until an aspirating needle was used and no pus obtained.

In two respects the clinical picture was distinctly different from that seen in the patients making up the series of which we have spoken. There was no mass, nor was there flexion of the thigh. There was no evidence of localization.

By November 21, the point of tenderness and rigidity seemed to be more distinct just inside the crest of the ilium and we, therefore, made an incision 2 inches long just inside the iliac crest. The attachments

were dissected from the crest, and the ilio-psoas muscle (in this instance it would be technically proper to say the iliacus muscle) was separated from the concavity of the ilium and pushed medially, it being expected that an abscess would be found behind it, as in the case of the patients reported in the series mentioned; but no pus was found.

It was observed, both by touch and by sight, that the muscular mass presented evidence of having in and about it a large amount of inflammatory exudate. Suspecting that the inflammatory focus might be in the muscle mass it was penetrated by blunt dissection, when a very small amount of heavy, rather creamy, odorless pus was encountered, together with a good deal of necrotic material. No distinct abscess cavity could be made out. Two drainage tubes were introduced—one of them into the inflammatory mass in the muscle and one in the space between the mass and the ilium.

A culture from the pus recovered at operation grew staphylococchs aureus. After the operation there was an early disappearance of all unpleasant symptoms. There was but little drainage for thirty-six hours, then a little more for a few days, after which there was rapid reduction. At the end of a week both tubes had been removed. The patient was discharged December 2, 1925, eleven days after operation, without fever, pain or distress of any kind. There was practically no drainage. He was dressed at our office December 4th, two days after discharge from the hospital. He was up and walking without difficulty. Drainage had ceased, there being only a small granulating area representing the site of tubes. We had a letter from his father written on December 31, 1925, in which he said that the patient was entirely well.

In connection with abscesses in and about the ilio-psoas, the data secured at the operation upon this patient would seem to definitely settle the question as to whether or not abscesses may develop in an independent manner in this region. It has been suggested by others that abscess behind the ilio-psoas is most likely associated with infectious processes extending downward from the perirenal area. In this case the infectious area was found in the muscular mass, and it was found just at the beginning of coalescence of the various foci that were breaking down in the inflammatory area, but before complete coalescence, with the formation of a definite cavity had taken place. It would seem that the small amount of pus, with necrotic material, without the evidence of a distinct cavity, would be proof of such a process.

This patient was seen for the first time after he had been ill for about ten days. The patients in the series of six, to which we have referred, had been sick in every case as long as three weeks, some of them longer than a month. In each of those cases there was a mass on the inner side of outer Poupart's with flexion of thigh. It would seem that we are able to conclude that if the process in the case we are now reporting had been permitted to continue there would have been the formation of a typical abscess, resulting in the development of a mass on the inner side of the crest of the ilium, and as a result of the tension of the ilio-psoas, there would have been flexion of the thigh. It is our conclusion, then, that these two signs put down in the syndrome associated with abscess behind the ilio-psoas are present only after the full development of the abscess, and are not necessarily present during the developmental process. This would seem to be a particularly reasonable conclusion if the infectious process is in conection with the iliacus, because in that case the tension would not at first reach the psoas, proper, a contraction of which is the most important feature connected with flexion of the thigh; nor would there be a mass on the inner side of the crest of the ilium, or outer Poupart's until after a full development of abscess in an area more or less remote from the site at which it finally manifests itself by surface swelling.

Our conclusion is that these independent ilio-psoas abscesses develop as a result of hematogenous or lymphagenous infection (from foci somewhere in the body) following slight or indefinite local trauma.

Non-tuberculous ilio-psoas abscess must be differentiated from hip disease, osteomyelitis of the pelvis, appendicular abscess, and tuberculous ilio-psoas abscess.

DISCUSSION OF GENITO-URINARY COMPLICATIONS OF PREGNANCY*

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OKLAHOMA CITY

The genito-urinary complications of pregnancy embrace such a large field with such deep ramifications into the realm of

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

other specialties that it is useless to attempt to discuss them all in a paper of this length. Therefore, I shall confine myself to calling attention to some of the more common complications and the cause of their increase.

It is apparent to all of us that during the past eight or ten years there has been a great increase in promiscuity of the sexes, whether this is due to the natural process of evolution, prohibition, the advent of the automobile or a combination of all three; it remains that watchful expectancy must give way to active watchful prevention.

Our examinations especially of the urine and genital organs must be increased in frequency as a rectal examination will not suffice. I have called attention once before in this section to the fact that the incidence of venereal infection in the married is the greatest during the puerperium.

Examination of the urine must be frequent and complete, not only must we watch for hyperacidity, albumen or casts but the finding of pus cells in the urine demands that we attempt to find the cause. Thus may we often find an unsuspected urethritis, cystitis, pyelitis or nephritis, the early discovery of which may mean everything to our patients.

We must remember that too much bicarbonate of soda produces an alkalosis, the symptoms of which resemble acidosis and not dismiss the patient with the advice to take more soda.

Vaginal examination should be more frequent and more careful and must be from without, inward, and not consist of simply finding out how much the fetus has grown since the last examination.

First we must look for vaginal secretions and free from our minds any idea that a profuse leukorrhœa is ever natural in a pregnant woman either before delivery or afterwards. Yet many women have been so told and so believe. A purulent discharge need not be gonococcal in type to cause much damage and later trouble especially to the vaginal mucus membrane and cervix.

Vulvitis is usually secondary and points the way to an existing bartholinitis, urethritis or endocervicitis. The mucus membrane of the adult vagina is not easily attacked by the gonococcus unless other infections have preceded or followed.

We next examine the Bartholinian gland on the inner surface of the labia minora opposite the vestibule, this should not be palpable if normal.

In examination of the urethra we must keep in mind the fact that the subjective symptoms of a urethritis in women are often so mild that only a small percentage give a history of noticeable symptoms. The urethra should be stripped and if there is even a suspicion of a discharge it must be examined microscopically.

Endocervicitis is the cardinal lesion in the adult female and one requiring an exacting examination; as far too many women are suffering from a chronic endocervicitis and have become resigned to a chronic leukorrhœal discharge for the rest of their sexual life when this pathology is the result of a condition which should have been found and corrected during pregnancy. The large inflamed, perhaps eroded or ulcerated cervix so often found, usually prevents another conception and frequently leads to abortion. The upward spread of infection leads through the uterus to the tubes and may mean surgical interference. Too often this occurs as a gradual process following delivery.

Abnormalities, malformations, ulcerative lesions and operative conditions of the urogenital tract all come to light by frequent examination. *Bowers of the United States Public Health Service makes the statement that 10 to 20 per cent of all persons have been infected with syphilis and 10 per cent of all syphilitics acquire the disease in an innocent manner, Whether you consider these figures too high or too low they still show us that we should require frequent blood tests on pregnant women. As our syphilitic patients are almost invariably under treated and frequently marry in that condition, an early diagnosis and the prompt institution of vigorous treatment is imperative.

CONCLUSION

We need much more frequent examinations both vaginal and of the urine because of the present sexual attitude of the youth of to-day, the mothers and fathers of tomorrow. Frequent Wassermann's are essential. We must reduce to a minimum the number of women who say, "I have not felt well since the birth of my baby."

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EDITORIAL

REDUCTION IN OPERATIVE GALL-BLADDER MORTALITY.

Factors reducing mortality after gall-bladder operations have been recently summarized by Fallon (1) who reviews the results and conclusions after performing 1103 operations upon the gall-bladder in the twenty-five years from 1901 to 1926. Over ninety per cent of the operations were for gall-stones, four fifths of the operations were upon women and four fifths of these had borne children. In the eight years from 1914 to 1921 the mortality was 7.7 per cent. In 1922, 5.2 per cent; in 1923, 4.8 per cent; in 1924, 3.8 per cent; and in 1925 the mortality was 1.9 per cent. This low mortality was not due to the efforts of any one individual, but to co-operative effort in the preliminary preparation and in the operating room. The patients were not selected and in recent years, the operation, with few exceptions has been cholecystectomy. Experience deduced from this work has made Fallon wary of removal of the gall-bladder without stones, for it is often difficult for the internist or operator to tell when a gall-bladder, in the absence of stones, is or is not diseased. Hepatitis, in greater or less degree, as a rule, accompanies cholecystitis, but it was noted that such cases gave no definite clinical picture, the same being true in those cases in whom liver changes had progressed to a stage of cirrhosis. When it comes to removing a gall-bladder without stones, warrant for the procedure must be mainly secured from dependence upon a thoroughly exclusive diagnosis. Reliance is placed upon gall-bladder function tests and the van den Bergh test, the latter especially in selecting the time for operation. Absolute insistence upon early operation after diagnosis of gall-stones, is insisted upon, for gall-stones, may, and do cause liver and pancreatic diseases, even a cholecystitis heart.

Gelpi (2) received a rather startling revelation upon checking the gall-bladder work performed at the Charity Hospital in the ten years, 1914-1925. 174 males and 302 females were operated upon. 173 cases had stones, 26 had had typhoid fever. 78 were recorded as acute, 398 as chronic. Incidental appendectomy did not affect the mortality. Cholecystectomy was done 296 times, with a mortality of 16-.21 per cent, while cholecystotomy had a mortality of 16.11 per cent, mortality in the acute cases was 25.61 per cent, in the chronic type, 14.32 per cent, total mortality of all types, whether simple drainage or removal of the gall-bladder was performed produced a mortality of 16.17 per cent. These figures proved to be far beyond expectation, but may be accounted for by the fact that at Charity Hospital certain conditions prevail which explain the rate, outstanding among which is that it is a clearing house for advanced pathology and operations are performed by different individuals. In one service, during part of the time the mortality for cho-

lecystectomy was 5.45 per cent as against 16.21 per cent in the larger series, and, though cholecystotomy was done only eighteen times, the mortality was 27 per cent. He accounts for this high mortality by the fact that only acute cases, the worst operative risks, are drained. As a cause of death chiefly were noted surgical shock, post-operative hemorrhage, sepsis, myocarditis, diffuse peritonitis and nephritis. He suggests serious preoperative study and preparation, more careful selection and administration of the anesthetic, increasd use of splanchnic anesthesia and a careful attention to every other detail of the work.

(1). "Observations Based on Eleven Hundred Operations for Gall-Bladder Disease," Michael F. Fallon, Boston Medical and Surgical Journal, Vol. 196; No. 5.

(2). "Analysis of Postoperative Mortality and Postoperative Morbidity in Gall-Bladder Disease," Maurice J. Gelpi, New Orleans Medical and Surgical Journal, Vol. 79, No. 8.

"NATUROPATHY", ANOTHER SALVATION OFFERED MANKIND.

A short time ago, when asked for an opinion as to suggested changes in the law governing a certain so-called medical cult in Oklahoma, which formerly rejected any affiliation with the regular medical profession, but has lately seen the error of its ways and now seeks joint action, we voiced the opinion that such mesalliance was useless and impossible and that the only solution protective to the people of Oklahoma was that offered by the broad principle that every person proposing to practice should be required to show evidence of his fitness in the fundamentals. This opinion is born of the fact that the writer has personally observed, probably a dozen different cults of so-called healing demand separate legislation, separate boards and separate recognition for their disciples, then, as the years passed, and their shortcomings found them out, they have been observed to wholly disappear or become so small numerically that it was even difficult to find a member in the entire State to represent them as a member of the Board they had so arrogantly and ignorantly sought a short time before. Personal observation strongly inclines to the idea that the number of osteopaths in Oklahoma has sharply declined, certainly in the eastern section of the state they have decreased. Where formerly Chiropractors cluttered up every dusty crossroads, it will be found that they have largely returned to the stable, kitchen or farm from whence they sprung. A quarter of a century ago every hamlet contained one or more Magnetic Healers. Today they are the "Snows of Yesteryear." It is doubtful if a single member of this cult is to be found in all the broad confines of the state, they, too, have returned to the parent stump, or have evoluted, or degenerated, as the case may be into Chiropractics and birds of similar ilk.

In replying to our correspondent as to the proposed changes, we are of the opinion that these were like the mythical dragons teeth. Uproot one and it returns multiplied. That we would hardly have the ink dry before another cult would be knocking at the legislative door demanding more farcical legislation. The strange part about all this is that we seem not to profit by experience or use our memory of the past as it slowly revolves in repetition before us. Now comes the Naturopath, in the identical rut of his predecessors. They too wish, and have had introduced a bill which has reached that stage in legislation known as a report of "Do pass" in the House. The difinition of Naturopathy is not to be found in a late edition of Webster's International Dictionary, however, that does not deter the scientific originators and suporters of this latest piece of legislative foolishness from offering this as "The science and art of prophylactic and therapeutic methods which enables the naturopathic doctor to direct, advise, prescribe, or apply food, plain, spray, or mineral baths, heat, light, herbs, exercise, electricity, radio-vibration, minor surgery, spinal treatment and the correction of physical lesions by means of mechanical methods, to assist nature in the restoration of health and vigor of mind and body. Naturopathy in this Act shall also embrace obstetrics to be practiced by so many as show competent qualifications."

Now, we submit, if there is much left for the ambitious in other fields of endeavor, we fail to discern it. Just note the far flung abilities embraced-prophylaxis, therapeutics, dietetics, hydroand greasotherapy, in all their ramifications, thermotherapy, herbalism, athletics, electricity, massage, surgery, "spinal treatment" (this sounds suspiciously like some old offendors of the past), mechanics, and, finally, a means of "assisting nature". As an afterthought, one may practice obstetrics,

if they are fitted to perform that simple service.

Disguised under any name or title, this silly proposition is merely another effort on the part of the misfits and incompetents to have themselves legislated into the privileges and prestige of worthy and earnest students and practitioners of medicine.

FOR OKLAHOMA'S CRIPPLED YOUTH.

If the recent Legislature did nothing except enact House Bill 170 it did enough to permanently command the respect and admiration of thinking people. This Bill, signed by Governor Johnston, March 10, with the emergency clause attached immediately becomes the law with reference to the cripples of Oklahoma, a class heretofore largely pitied, but rarely ever the recipients of actual aid and help tending to improve and amelerioate their condition.

Briefly, the terms of the law provide as follows:

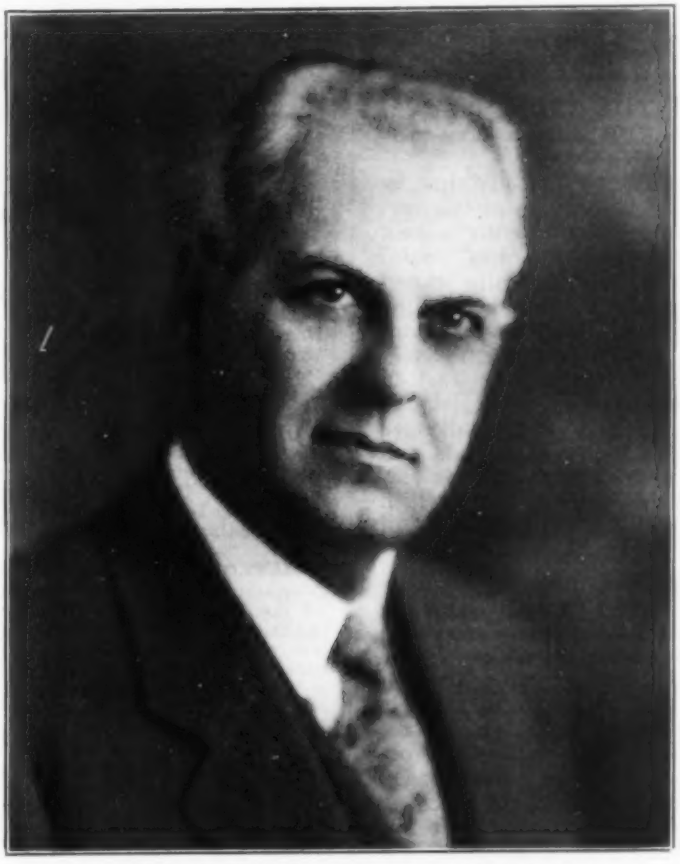
Any Judge, on his own motion, or on complaint of any elector, when it is alleged the parents or other person legally charged with the care of a resident of six months duration, under twenty-one years of age, and who is suffering from a deformity or malady, which may probably be cured, are unable to provide means for medical and surgical treatment and hospital care; may direct the County Superintendent of Health to personally examine and report upon the condition, after which procedure, the Judge shall have power to summons other physicians, for opinion. No more than thirty days may elapse until such reports are filed, and, in certain cases the court may waive entirely such formality. After the usual procedure of courts, which in this case attempt is made to expediate with every reasonable precaution, the Court may enter an order for entrance of such child to the University Hospital, Oklahoma City, for free treatment. Provided, cases of plastic and orthopedic surgery may be sent to other Oklahoma hospitals, provided such hospitals are willto accept the compensation provided for in the Act and are "approved" under Section 7 of terms of the Act. Section 7 provides, that physicians and hospitals desirous of qualifying for this work shall make application to the dean of the University of Oklahoma, School of Medicine, submitting their qualifications, which will be passed upon by the faculty of the University, and approved or disapproved, as the case may be. Only those orthopedic surgeons may be approved as specialists who devote at least sixty per cent of their professional time to that chosen specialty, and hospitals to be approved under the Act must meet the requirements of standards as set by the American College of Surgeons. At least once annually the faculty of the University, in conjunction with the State Health Department, shall hold free general clinics in each congressional district, for the purpose of examining children who may be presented for such.

We believe that, in the main, this will meet with the whole hearted approval and support of every thinking physician in the State. There may be some criticism as to the tests for hospital qualifications, but that is a mere detail of a large humanitarian plan, which may be finally worked out until the whole is a finely working machine, functioning in a very noble purpose. As a matter of fact most of such children are financially unable to help themselves, otherwise there would be no necessity for the law—they would go where they please and receive treatment accordingly, but in this case they will be referred to the very best orthopedic surgeons of the State, who will receive some compensations, but nothing in keeping with the service rendered, but largely offset and compensated for in that their cases are centralized in groups, under their immediate observation and control, therefore, in the most satisfactory condition possible.

DR. O. O. HAMMONDS, STATE COMMISSIONER OF HEALTH

Dr. O. O. Hammonds, Okmulgee, was recently appointed by Governor Johnston as State Commissioner of Health, immediately assuming the duties of office. Dr. Hammonds, for many years was surgeon for the Choctaw Lumber Company at Broken Bow, in charge of the hospital at that point and for several years past has resided in Okmulgee, doing general work.

THE JOURNAL wishes Dr. Hammonds success in the performance of a rather hard task and believes that the majority of the medical profession will meet him in a co-operative manner, sympathetic of the fact that the laws under which he is to function are not perfect by any means, that his task cannot be performed over-



DR. OLIVER OVERSTREET HAMMONDS
STATE COMMISSIONER OF HEALTH.

Born March 27, 1880. Graduate University Medical College, Kansas City, Mo., 1900. Dr. Hammonds was formerly Surgeon of the Broken Bow Hospital, later removing to Okmulgee, where he has resided for several years.

night, and that only by co-operation from them is his work to be marked by any particular success. We believe Dr. Hammonds will be unusually firm in his insistence that the spirit and letter of the law be carried out and also that his contacts with the profession will be pleasant and profitable. Everyone is assured that he is a genial and pleasant gentleman and not above receiving suggestions and aid from the medical profession.

VALIDITY OF THE STATE BOARD IS UPHELD

As has been predicted for some time by close students and authorities of the law, the State Supreme Court recently upheld the validity of the State Board of Dental Examiners, which automatically closed the suit and contention brought against the State Board of Medical Examiners alleging that they, too, were acting illegally in accepting fees for registration instead of reimbursement directly by legislative appropriation. Validity was challenged when the Criminal Court of Appeals rendered a decision virtually overriding former decisions of the Supreme Court, which indirectly upheld the constitutionality of similar boards.

The legislative committee of the association, and the State Board of Examiners had had prepared a comprehensive Bill for presentation to the legislature in the event the Criminal Court of Appeals' contention was sustained, but fortunately is not now necessary. And, we are not sorry over the decisions, for the whole objection was based upon very flimsy technicalities, forgetful of the fact, which all physicians should not forget, that the State Board of Medical Examiners is a body created by direct authority of the Constitution, and even should they err in the small matter of the means by which they collect fees, their life and validity cannot be attacked on that ground with any ultimate hope of success.

Editorial Notes—Personal and General

DR. H. G. CRAWFORD, Dewey, visited Chicago clinics for special work in surgery during January.

DR. A. L. DAVENPORT, Holdenville, recently received painful injuries when his car skidded into a ditch.

DR. and MRS. W. K. WEST, Oklahoma City, visited Cincinnati and Memphis in February.

J. L. LEHEW, Pawnee, imitated Doctor Davenport, in also sitting in the seat while his car skidded into a ditch. He reports bruised but busy.

NOWATA COUNTY Medical Society elected for 1927, Dr. J. P. Sudderth, President, and John R. Collins, Nowata, Secretary.

PONTOTOC COUNTY held a meeting and banquet at Ada, February 21. Dr. M. C. McNew was toastmaster and Dr. S. E. Milliken, Dallas, the guest of honor. Mc read a paper upon his inguinal hernia operation, illustrating the work with cuts.

OKMULGEE COUNTY Society meeting at Henryetta, February 15, had as its guest, Dr. P. T. Bohan, Kansas City, who talked on "Coronary Thrombosis." A clinic on chest conditions was held.

ST. JOHN'S HOSPITAL, Tulsa, at a special meeting, January 27th, named the following staff, Drs. Fred A. Glass, president; W. Albert Cook, vice-president and C. T. Hendershot, secretary-treasurer. Regular meetings are to be held the third Tuesday in each month.

DR. R. M. HOWARD, Oklahoma City, was elected President of the Southwest Section, American College of Surgeons, meeting in Tulsa late in January. Dr. McLain Rogers, Clinton, Secretary, Leroy Long, Oklahoma City, Councillor. The next meeting will be held in Little Rock.

MUSKOGEE is to have a large expansion in hospital construction according to announced plans of the Baptist Hospital Directors of Muskogee, Additions totaling an expenditure of $125,000.00 are planned, which, when added to the present structure will double its capacity.

THE CRIMINAL COURT OF APPEALS recently sustained the conviction of Dr. J. T. Reeves "Specialist in Chronic Diseases," from Ardmore, Carter County. The Court decided that one not a graduate or registered was not permitted to use the term "D.R.", "M.D.", "Specialist", or any other term indicating that he is a licensed physician.

DOCTOR HOWARD WEBER

Dr. Howard Weber, Bartlesville, a retired physician and one of the State's original and successful oil developers died January 29, 1927, at his home, the cause of death was myocarditis. For several years he has not practiced medicine, his mantle in that respect having fallen to his son, Dr. Henry C. Weber, Bartlesville, surgeon and member of the State Board of Medical Examiners. Dr. Weber graduated from the Long Island College Hospital in 1882. He engaged in the oil business in Oklahoma from 1904 to 1926, his greatest achievement being the development of the Turkey Mountain pool, near Tulsa.

MUSKOGEE is "all at sea" over the question of a hospital location. Recently, after sale to the Veterans Hospital of the City hospital, the city found itself with the cash to build, but minus any concrete plan as to how much, how large or where to build a needed institution for the care of its people. A committee from the Council rejected an offer from the Baptists, selected a site, alleged to be largely mudhole, mosquitory, noisy and generally unfitted, then rescinded that action and are now marking time.

THE TULSA ACADEMY OF MEDICINE was organized in that city, March 9th, with the following officers to conduct its activities: Presiden, Samuel Goodman, vice-president, D. O. Smith, secretary-treasurer, James Stevenson. A board of directors consisting of Samuel Goodman, Fred A. Glass, Jas. C. Braswell, D. O. Smith and James Stevenson was named. The next meeting will be held at Hotel Mayo, April 20th, at which time Dr. Goodman will present "Lung Abscess following Tonsillectomy," all mem bers of the medical profession will be welcome at this and subsequent meetings.

ACCIDENTAL OR VIOLENT death came to 1494 Oklahomans during 1926, (according to figures recently handed the press by Dr. O. O. Hammonds, State Commissioner of Health. Of the number 211 were suicides, 266 due to automobile injuries, 206 homicides and 791 listed as caused by other accidental or violent means. Incidentally, pneumonia accounted for 2236 deaths, heart disease 1669, tuberculosis 1321, diseases of kidneys 1204, cancer 1168 and appoplexy 1008. 11,314 males and 9,165 females was the division as to the sexes.

MENTALLY DERANGED patients will no longer have their expenses paid by counties committing them to state hospitals if the Supreme Court is correct in a recent ruling and no relief is afforded otherwise by legislative action. Logan County authorities recently repudiated or refused payment of bills aggregating more than $27,000.00 demanded by the State Hospital at Norman rendered for care of those committed by courts from Logan County and the Supreme Court sustained the county contention. Perhaps the ruling is just, for it should be remembered that a large number of people are committed from Logan County, chargeable to other counties committed merely by reason of the fact that they are temporarily resident of Logan County, yet technically residents of Logan.

GARFIELD COUNTY Medical Society will hold a special guest day program at Enid, April 16, 1927. Clinics in Pediatrics, Dermatology, Orthopedics, Internal Medicine and Surgery will be held in the morning. In the afternoon the following program will be presented.

"Some of the More Important Points in the Diagnosis of Brain Tumors," Dr. Ernest Sachs, St. Louis.

"Intestinal Obstruction," A. D. Small, Dallas.

"Symptoms of Underfeeding in Breast-fed Infants," Wayne Rupe, Norman, Okla.

"Troublesome Fractures,"C. E. Ruth, Des Moines.

"Types of Urinary Incontinence," D. K. Rose, St. Louis.

"Diagnosis and Treatment of Cancer of the Skin," Richard Sutton, Kansas City.

"Residual Infection in the Jaw after Teeth Extraction," C. W. Keeling, Kansas City.

A banquet will be held at 7:30 p.m. after which Dr. Richard Sutton, who has hunted extensively in Africa will give an illustrated lecture on Tiger Trails of Southern Asia.

SMALLPOX has lately challenged the attention and interest of health officers generally in central Oklahoma, especially demanding attention in the Seminole, and allied oil fields. The new State Commissioner of Health, Dr. O. O. Hammonds promptly met the issue by personally going over the field and assigning a large number of competent men to handle the situation. Dr. D. P. Bowden, representing the United States Public Health service and assigned to Oklahoma visited the field and co-operated. Health officers of Hughes, Seminole, Oklmulgee and Okfuskee Counties also co-operated in the work, sounding the necessary warnings and offering free vaccinations to those in need. This is all very

DOCTOR H. E. RAPPOLEE

Dr. H. E. Rappolee of Madill, died in Oklahoma City, February 25th, after suffering from illness for two years. The cause of death is given as cancer. Dr. Rappolee was born at Smithland, Ky., June 29, 1869, and after attending the common schools he entered and graduated from the Kentucky School of Medicine, June 1898. He located at Bennington, Indian Territory where he practiced in 1879 and 1898. After that he located in Caddo where he lived for nine years. At the time of his death he was serving his second term as health officer of Marshall County. and had resided in Madill for nine years. He is survived by his widow, two daughters and three sons. His remains were interred at Madill.

DOCTOR ANTHONY R. MAVITY

Dr. A. Ralph Mavity, Marlow, died at his home in that city, February 5th, after a short illness. Death is reported as due to heart disease.

Born at Corning, Mo., November 3, 1880, he received his preliminary education at Corning and Stansbury, Mo., after which he attended and graduated from the Central College, St. Joseph, Mo., March, 1902. After receiving his license in Oklahoma in 1902, he located in Lawton where he remained for several years, moving to Harlow in 1916. He served as a medical officer in the World War. He is survived by his widow and several brothers and sisters who reside in the middle west. Burial was made under the auspices of the Masonic order, Methodist Church and the American Legion of which he was a member. A firing squad from Ft. Sill aded to the solemnity of the occasion. Interment was made at Lawton.

nice and it should be, according to past standards, but still, the writer believes that more effective results would accrue if health officers and all physicians should announce. "People, smallpox threatens you, pay no attention to it. I need work and a case of smallpox not to me decidedly more than a harmless vaccination. Take your choice."

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

Operations in the Treatment of Spastic Paralysis, by H. L. Von Lackum, M.D., New York City, N. Y. Journal of Bone and Joint Surgery, July, 1926.

In this article the author begins by urging that anything offering relief to the patient should be carried out as every one knows the burden thrown upon those caring for the patient and the later effect on the patients themselves. He also calls attention to the good derived by operation upon many of these patients, that is, their improvement mentally, the new interest in life that may be aroused and betterment in general health.

A brief resume of the anatomy, of the structures occupying points for selective operation, with description of different methods of prevention and correction of deformity and consequent post-operative muscle training and education which will at least equip these individuals to care for themselves and relieve others of such responsibility.

He also calls attention to Sharp's work on hemorrhage in the new-born and emphasizes the fact that should proper observance at birth be carried out, fewer cripples will result and effort saved for constructive work instead of being used in repair of that which never should have been.

A Simple Measure Method of the High Trochanter: Karl Bragard, (Munich). Ztschr. f. ortho. Chir., xlvii, 2, 232, February 15, 1926.

A lead tape is placed along the crest of the ilia and the point of the trochanter which is still palpable to the finger is marked. Then the legs are slightly spread and a caliper is applied—one point touching the wire and the other the tuber ischii, the caliper being held perpendicular to the wire. Then the legs are adducted and in the same manner the distance is read between the marked trochanter and the wire along the crest. The comparison of the readings on both sides gives changes in the height of the trochanter. The method has been tried by the author on more than one hundred cases and the margin of error was found to be less than one-half centimeter.

Fractures of the Head of the Femur: Frederick Christopher M.D., Archives of Surgery, May, 1926, p. 1049.

Fractures of the head of the femur are said to be very rare, only fourteen having been recorded. The author adds the report of another case, and abstracts those previously reported in the literature.

The fracture usually results from extreme violence and is almost always associated with a posterior dislocation. This complication makes diagnosis extremely difficult so that X-ray examination or actual inspection of the site of injury is necessary for positive diagnosis. In most of the cases, treatment, which consists of reduction of the dislocation followed by early mobilization, resulted in only fair function recovery. In some cases operative removal of the fragments is necessary.

BACTERIOLOGY, PATHOLOGY and PUBLIC HEALTH

Edited by Drs. L. A. Turley and Gayfree Ellison, Norman, Oklahoma

The Intravenous Use of Acriviolet and of Mercurochrome in Bacterial Infections.

James S. Simmons—The Journal of Infectious Diseases. Vol 29, No. 4, October, 1926.

Since bacteria were first known to cause disease, the medical profession has sought diligently for some chemotherapeutic agent that would combat them. The discovery by Ehrlich of the spirochetocidal action of salvarsan has stimulated an enormous amount of research in this field. So far, the search has not been successful.

Among the many chemotherapeutic agents used, certain dyes, as gentian violet, neutral acriflavin, and mercurochrome 220 soluable are of special interest. In order to obtain further information of the subject, an investigation was made at the Army Medical Center to determine the bactericidal action, toxicity, and chemotherapeutic value of acriviolet, a mixture of neutral acriflavin and gentian violet, and of mercurochrome 220 soluble. A brief review of the action of gentian violet and neutral acriflavin follows.

The experimental investigation of acriviolet was carried out to determine; 1. The bactericidal action in vitro; 2. Local antiseptic action on the skin; 3. Toxic effect on the tissues; 4. Value of the intravenous treatment of septicemia and general infections in animals and man.

1—It was found that acriviolet in vitro was an effective bactericidal substance in the absence of proteins. A 1-1000 solution killed staphylococci in fifteen minutes. When blood was added, however, a concentration of 1-200 of the dye was required. Ox bile also interfered with the bactericidal action.

2—A five per cent acriviolet in 50 per cent alcohol sterilized the human skin in two minutes.

3—Toxic effect on normal tissue. Acriviolet injected subcutaneously caused a necrotic lesion of the skin in animals and in man. Aqueous solutions of acriviolet caused hemolysis of red blood corpuscles.

Various amounts of the dye were injected into normal rabbits. From these experiments it was found that if acriviolet was used intravenously, amounts of more than five milligrams per kilo body weight of a five per cent solution proved fatal.

4—Value as treatment of bacterial infections: Rabbits were injected with standardized doses of staphylococcus aureus, and treated with various amounts of arciviolet. In all instances the control animals lived longer than the treated animals.

Acriviolet was used intravenously for the treatment of eight cases of bacterial infections, six of which were septicemia. One of the cases of septicemia was infected with staphylococcus albus, one with streptococcus viridius, and four with

streptococcus hemolyticus. A five per cent sterilized solution of the dye was used.

The treatment was discontinued because it had no therapeutic effect, and because of its toxicity to the kidneys.

In this series two cases showed some improvement, two showed no improvement, four became worse and three of them died.

Mercurochrome 220 soluble: Mercurochrome 220 soluble, the disodium salt of dibromehydroxylmercuriflourescine, contains 23-24 per cent of mercury, has been extensively used as a germicide both locally and intravenously. The results of the experiment:

1—Bactericidal action in vitro: Staphylococcus aureus and B. Typhoid organisms were used. A 1-100 solution in water killed the staphylococcus in fifteen minutes; a 1-20,000 solution in water killed the staphylococcus in one hour. However, when blood was added to the solutions, a one to one hundred dilution did not kill the organisms in one hour. To obtain this concentration in the blood stream would require the injection of a fatal dose.

Typhoid bacillae were killed in five minutes in a 5000 dilution in water. A 1-25,000 dilution killed them in thirty minutes.

If ox bile was added to the solution it required five times the concentration of the dye to kill the organisms in the same time.

2—It was concluded that a 5 per cent solution of mercurochrome 220 soluble in 50 per cent alcohol was an effective local antiseptic on the skin and on tonsils

3—A 1 per cent aqueous solution of mercurochrome 220 soluble was especially prepared for intravenous injection by the manufacturers and used in this experiment: (a) in various bacterial infections in man; (b) experimental staphylococcus aureus septicemia in rabbits; (c) experimental typhoid cholecystitis in rabbits.

The results:

(a) Twelve patients, ten with gento urinary infections, received from one to three doses of mercurochrome: Dose—3 to 5 m. g. per kilogram body weight; intravenously at weekly intervals. The genito urinary group included eight patients with gonorrheal infection. The use of the dye had no apparent effect on the gonococci or on the discharge in acute cases nor did it contribute to the clinical recovery in this group.

The other two cases—a case of chronic empyemia with septic temperature, and one case of hemolytic streptococcus septicemia died after receiving one and two doses, respectively, of the dye.

Intravenous dose of 5 m. g. per kilogram per body weight produced such severe reaction that the dose was reduced to 3 m. g. per kilo. Even then, symptoms of mercurial poisoning were produced.

(b) Rabbits injected with fatal doses of staphyloccus aureus, were treated immediately with one or more doses of mercurochrome intravenously in doses of 5 m. g. per kilogram body weight. Most of the treated rabbits died before the control rabbits died.

(c) Hill and Scott report that typhoid cholecystitis in rabbits could be cured by a single intravenous injection of mercurochrome and suggested this treatment in human typhoid carriers.

A biliary fistula was produced in rabbits for collection of the bile. Five m. g. per kilogram of mercurochrome 220 soluble was injected intravenously into these rabbits, and the amount of mercurochrome secreted in the bile was estimated. It was found that mercurochrome was secreted in the bile in a concentration of 1-2000 to 1-9000 for over two hours. In as much as the typhoid bacillus is killed in bile solution in 1-5000 dilution in less than thirty minutes the experiment was considered encouraging.

However, when typhoid bacillae were added to this bile containing excreted mercurochrome it failed to kill the bacillae in twenty-four hours.

Nichols succeeded in producing a typhoid bacillus cholecystitis in rabbits, proving by culture that the typhoid bacillae were present in the gall bladder.

Each animal was given 5 m. g. of mercurochrome 220 soluble per kilogram on two successive days. When tnese animals were killed at the end of four and seventeen days respectively the gall bladders of each still contained living typhoid bacillae.

Nichols also treated one human typhoid carrier daily with 100 to 200 m. g. of mercurochrome by mouth for a week. Cultures of the feces still contained typhoid bacilli. In view of the work reported, it is not believed that the intravenous use of either acriviolet or mercurochrome 220 soluble offers promise of beneficial results in the treatment of bacterial infections.

Bacteriologic Study of Chronic Periapical Dental infection.

Hoyden, Russell L.—The Journal of Infectious Diseases, 38:486, 490, June, 1926.

The relation of chronic periapical dental infection and pulpless teeth to acute and chronic systemic disease has been attracting attention of clinicians for the past few years. It is, therefore, important to determine the accuracy and dependability of the diagnostic methods employed in detecting periapical infection.

The author records the result of cultures of the apex and periapical tissues of 1500 teeth.

All cultures were made in deep tubes of glucose brain agar, and also in glucose brain broth, Ph. 7, as this medium affords the best graduations of oxygen tension, and nutritive quantities favorable for the growth of organisms in infections about the teeth. In the agar medium, one can determine the approximate number of organisms in the material inoculated. The broth cultures are used for the inoculation of animals, transplants on blood agar plates, and identification of organisms.

The greatest care is exercised in obtaining the material for culture. The teeth to be extracted are first scrubbed with gauze, teeth and gums painted with iodine, and then washed with alcohol to remove the iodine. After the area of operation is walled off with sterile gauze, the teeth are extracted with sterile forceps. After extraction, the apex of the tooth was cut off and placed in a sterile tube containing 1 c. c. of normal salt solution, and a small amount of sharp sand. The tube is well shaken to macerate the tissues at tip of tooth and a portion inoculated into the liquified glucose brain agar at 40 degrees C.; the remainder into the glucose brain broth.

The glucose brain agar tube was mixed by inverting, pouring into Petri dishes and allowed to harden. Incubate at 38 degrees D., for twenty-four to forty-eight hours. Gram stains were routinely made of postive broth cultures. For determination of types of cocci, transfers were made from broth tubes to blood agar plates. Single colonies of streptococci were picked and

transferred to brain broth tubes and inoculated

Clinical Material.

For statistical purposes, the author has included cultures from 1500 incisors, cupids and bicuspids, only which had been extracted without contamination. As controls, to determine chances of error, cultures of vital teeth, were used, employing the same technic, and in curing pulpless teeth. Careful radiograms were obtained from all teeth by a uniform method, at least two views of each tooth.

The teeth cultured were divided into three groups: vital, pulpless, and negative in the radiograph, and pulpless and postive in the radiograph.

Teeth that respond to the electric current were classed as vital. The teeth that show no response to stimuli were classified as pulpless.

Results of cultures:

Four hundred vital teeth were cultured. Of these, 85.5 per cent showed no growth in brain broth agar, while 55 per cent showed growth in the broth tubes. As vital teeth without caries are thought to be sterile, the positive cultures were no doubt mostly due to technical error resulting in contamination from saliva. Only 4.8 percent of the 400 cultures showed 1000 more colonies per tube. The cultures of vital teeth and the results were made for comparison. Agar tubes with less than ten colonies of bacteria were classified as possible contamination.

Five hundred radiograph positive pulpless teeth were cultures; 26.6 per cent showed no colonies in agar tubes. Sixty-two and eight per cent had 1000 more colonies. Forty-four and two per cent had over 1000 colonies per tube.

Six hundred pulpless teeth with negative radiographs were cultured; 43.3 per cent showed no organisms in agar tubes; 25.7 per cent had over 100 colonies per tube; 46.2 per cent had 1000 more colonies per tube.

The most noteworthy finding in the X-ray negative group was the high percentage showing bacteriologic evidence of infection without radiographic evidence. The evidence of infection being nearly as high as in the radiographic positive.

The types of organisms found were quite uniform—of the 1091 positive cultures 1009, or 92 5 per cent, showed streptococci alone or mixed with other organisms. In 963 only streptococci were found, 58 gram positive bacillae alone, and only 19 times were staphylococci found alone.

Most of the streptococci appeared as elongated diplocci, resembling pneumococci. The nonhemolytic streptococci were the common type. Hemolytic streptocci rare.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

The Relation Between the Right Kidney and the Appendix from the Viewpoint of Pathology.

"Laquiere (Journal d'Urologie) begins his article with a historical sketch in which he says among other things that it was only at the close of the last century that the urinary complications of appendicitis were given any study, and at that time one had in mind perinephritis and vesical complications. The renal lesions in the disease were particularly studied by Dieulafoy under the title of 'le rein appendiculaire'."

The article is to be continued. In the first installment in Vol. xxii, No. 2, August, 1926, the author, in addition to the historical sketch, says the very great frequence of involvement of the kidney with appendicitis is due to the anatomical relation of the right ureter with the appendix; the vascular, lymphatic, and nervous connections between the two; the existence of lesions or of ptosis of the right kidney leading to a tendency to infection. But a number of cases in which the right kidney is involved and not the left also, must remain unexplained at the present time.

It would seem as if the appendix and the right kidney were entirely separate and independent organs. The appendix lies free in the abdomen and is intraperitoneal, while the kidney is retroperitoneal. The blood vessels, the nerves and the lymphatics of the appendix pertain to the portal system, whereas the kidney has a special vascularization and innervation of its own and the veins belong to the vena cava system. But in reality there is a close connection, vascular, lypmhatic and nervous.

When there is ptosis of the kidney and this organ becomes displaced so as to lie behind the appendix; when the cecum and appendix become extopic they lie against the kidney.

A relation between the appendix and the ureter is frequently close. In fact, the kidney and the appendix normally lie far apart and it is with the ureter that the appendix comes into contact. An inflamed appendix may form adhesions with the kidney, the pelvis of the kidney, or with the ureter.

The vascular systems of the kidney and of the appendix are apparently distinct from one another, in fact, form many anastomoses. The arterial anastomoses exist between the arteries of the colon and of the perirenal arteries, and are of slight importance. The anastomoses between the viens are of far more interest. They are constant and normal and constitute the system of Retzius, a portocava way of anastomosis. Numerous plexiform vessels given off from the appendix and the colon cummunicate with the veins of the parietal peritoneum. These are tributary to the lumbar veins and the veins of the fatty capsule. The normal anastomoses are far more numerous when the appendnix is attached to the posterior wall, and the direct communication between the veins of the appendix and the ureter have been observed. Anastomoses such as those described can play only an unimportant part in the infection of the kidney by the appendix.

Lymphatic anastomosis between the appendix and the kidney is much disputed.

There are nervous connections between the appendix and the kidney.

Toxic substances produced by bacteria in the appendix may enter the kidney and cause a nephritis with albuminuria and casts in the urine. Infection of the kidney may also occur from the bacteria in appendicitis.

Some of the further observations which the author makes are that "appendicular nephritis" is not rare. The infection of the kidney from the appendix is in the large majority of cases due to the B. coli. Hematuria may occur in all forms of appendicitis acute, sub-acute and chronic, sometimes after appendectomy."

The above article is so pertinent to many misdiagnosis of the present day that I have copied it verbatim from the Prologic and Cutaneous Review.

SILVER COMPOUNDS

Silver nitrate first demonstrated the bactericidal property of silver. This was, obviously, an invitation to the chemist to devise a silver compound that could be used freely in solution, as silver nitrate could not. Especially desired was a silver salt that would kill the gonococcus without irritating the urethra, for it was soon learned that silver was especially efficacious as a gonococcide. To the majority of silver compounds offered from time to time one of two objections is made by the patient: first, they hurt; second, they left dark stains on the linen.

Now comes a comparatively new silver iodide preparation—one that actually protects the silver and the iodine from the action of light, and yet leaves its activity as a germicide apparently unimpaired. Neo-Silvol, as this product is called, is said to be 20 times as active as pure carbolic acid (in other words, to have a phenol co-efficient of 20) in contact with the gonococcus, and at the same time to be notably bland in its effect upon the inflamed tissues and free from the dark-staining tendency that characterizes other silver preparations.

Further particulars are offered to the readers of the advertisement on Neo-Silvol which appears on another page of this issue.

EXOGENOUS REINFECTION IN PULMONARY TUBERCULOSIS.

Lawrason Brown.
The American Review of Tuberculosis, January 1927.

There are three theories as to the source of adult pulmonary tuberculosis, (1) that it is all caused by childhood infection, (2) that it is largely due to exogenous reinfection from inhalation, (3) that while both occur endogenous reinfection is the more common and that exogenous reinfection rarely occurs after the twenty-fifth year. Proof of these various theories is very difficult and has not been accomplished up to date.

"From what data we have it would seem that adult infection does occur, and that it occurs much more frequent than many have supposed. The important problem, however, is: Does this infection, occuring after the age of 15 years, ever result in adult pulmonary tuberculosis, and, if it does, how frequent is it? Whether or not the tubercle bacilli is ubiquitious, many believe that today adults are constantly being exposed if they dwell in congested communities. Some of these implantations up to the end of the third decade may be primary infections, which the natural resistance, acquired possibly through heridity, enables the individual to resist, though it renders him allergic or hypersensitive to later infections, which, as I have said, is more or less continously taking place. Others of these implantations result in reinfections, and may add to the acquired or natural immunity already present, or, if they occur at a time when the bodily forces are at a low ebb, they may produce a definite focus of disease, which for a longer or shorter time may remain undiscoverable by clinical means. The occurence of debilitating circumstances may fially bring this adult infection, or more often reinfection, into activity, and clinical disease thus result. It is not likely that reinfection is followed at once by clinical disease.

The period during which reinfection takes place may extend from infancy to middle life, but exogenous reinfection probably occurs most frequently from the fourth to the twentieth years. Roentgenological studies indicate that by the tenth to the twelfth year many children have definite parenchymatous pulmonary involvement. Evidence is still lacking to prove that these are the subjects that will develop adult pulmonary tuberculosis from the fifteenth to the twenty-fifth year, but such an inference is strongly suggested. It may be that future study will show that these cases comprise many of those referred to in an earlier section of this paper as having peritruncal pulmonary lesions, which, as we know do follow in some instances of healed adult pulmonary lesions which apparently afford their bearer almost complete immunity to a future parenchymatous tuberculosis. If this is proved to be true by future work, then reinfection from puberty to the twentieth year may yet be found to be the most frequent cause of adult pulmonary tuberculosis. I am convinced that a certain percentage, somewhere between 20 and 40 per cent of adult pulmonary tuberculosis, is due to infection after puberty. I do not mean to imply that endogenous reinfection does not frequently take place, but I should like to protest against the assumption that it has been proved to be the most frequent manner of production of pulmonary tuberculosis or, indeed, that it is proved at all."

THE PART PLAYED BY CONTAGION IN TUBERCULOSIS AMONG ADULTS.

Stephen J. Maher.
The American Review of Tuberculosis, January 1927.

A study of the histories of 200 intelligent patients with tubercle bacilli positive sputum under treatment in the three Connecticut State Sanatoria indicated that the disease was possibly due to childhood infection in 11 cases; possibly to infection in adult life in 11 cases; probably to adult infection in 2 cases. There was nothing in the remaining histories to indicate that contagion, either childhood or adult, had anything to do with the present illness.

A careful study of the histories not giving contagion as a cause for the disease showed that more than one cause was frequently suggested in a single history, as, "dusty occupation and pneumonia," "severe scarlet fever, repeated furunculosis and pneumonia." Of these patients, 13 gave a history of long use of tuberculosis milk, 85 non-tuberculosis pulmonary disease, 45 severe skin disease, 21 severe abdominal disease, 38 severe throat disease, 100 dusty occupation, 11 noxious fumes and 6 bad working conditions. The number giving a history of long inhalation of dust while working was surprising even in a manufacturing State; of these 21 had worked in cotton mills, 19 in metal dust, and 30 in stone dust.

If contagion is the only cause of adult tuberculosis the disease should be on the increase rather than on the decrease as it is. The author feels

that since contagion played so small a part comparatively speaking in this series of cases, and since the anti-tuberculosis campaign has so lessened the opportunity for contagion, that perhaps the falling death rate is due to this work and that the time has now come to devote attention to educating the public to fight the many other conditions which cause this disease.

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THE COMMUNUCABILITY OF TUBERCULOSIS IN ADULTS.

Gaetano Ronzoni.
The American Review of Tuberculosis, January, 1927.

Figures on the proportion of cases of tuberculosis infection or latent tuberculosis among civilized adult individuals vary from 30 to 55 percent, the period of latency usually starting at the end of adolscence and increasing with age. The idea that adult tuberculosis, in countries where the disease is endemic, is the result of a superinfection either exogenous or endogenous is well established at present. While these two theories of re-infection are directly opposed, few authorities support one to the entire exclusion of the other. The solution of this problem is important from a standpoint of individual and group prophylaxis as well as from a scientific standpoint.

Except among adult members of primative civilizations in whom the disease progresses with the characteristics of a primary infection, recent tuberculosis infection cannot be considered responsible for the clinical symptoms of tuberculosis. Since clinical study and pathology anatomy show that the lesions resulting from primary infection are frequently never strictly latent, adult tuberculosis is often a late re-activation of an early infection. Thus progressive adult tuberculosis should be considered a superinfection from the re-activation of an old lesion as well as the result of a super-infection from an external source. Extra-pulmonary tuberculosis is usually due to endogenous super-infection through metastases from old re-activated foci, while pulmonary tuberculosis may be due either to the local re-activation of old lesions or to the spread of the germs from these lesions. While exogenous super-infection cannot be considered the predominent cause of adult pulmonary tuberculosis neither can it be excluded nor can it be properly evaluated at present. Massive infection seems to play little part, small repeated doses appear more active in a direct manner, while the toxic action developed by the bacilli killed and re-absorbed at the site of penetration is important.

Childhood being the most vulnerable age of infection, prohpylaxis should be applied especially during the period. The early recognition of tuberculosis in the adult as well as all modern hygenic measures are important features in the control and diminution of this infection.

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BOOK REVIEWS

The Surgical Clinics of North America, (issued serially, one number every month). Vol. vi, No. vi, (New Jersey Number—December, 1926). 318 pages, 93 illustrations and complete Index to Vol vi. Per Clinic year, (February, 1926, to December, 1926). Paper, $12; cloth $16 net. Philadelphia and London: W. B. Saunders Company.

While this issue is replete with the usual high class matter, one article especially, "Painful Shoulder" by Dr. Francis R. Haussling, Newark, may be so well worth while to both the distressed patient and vexed physician, that its close perusal will be of actual benefit to a certain class of very intractable cases. Another article worth while is "An Operative Method of Treating Hernia in Infants," by Dr. Paul M. Mecray, Camden.

The Specialties in General Practice. Compiled by Francis W. Palfrey, M.D., Instructor in Medicine at Harvard University in collaboration with 14 other teachers of Harvard Medical School. Octavo of 748 pages. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, $6.50 net.

This is an unusual book in that it attempts to formulate in a practical way the more frequent conditions belonging to the specialties rather than to internal medicine which the general practitioner is most called upon to treat. The fourteen collaborators in its preparation, is each himself, a specialist in his work attached to the teaching staff of Harvard Medical School. The text covers dermatology, genito-urinary surgery, gynecology, rhinology and laryngology, obstetrics, ophthalmology, orthopedic surgery, otology, pediatrics, psychiatry and surgery. Of course only general principles and the clearer indications can be noted, when the large field to be covered is considered. The book should be unusually valuable to the busy man and the beginner in medicine.

HISTORY OF THE MAYO CLINIC

Sketch of the History of the Mayo Clinic and Mayo Foundation. Octavo volume of 185 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, $3.50 net.

We commend this volume to those in need of inspiration. A reading of its pages, even the statistical parts, should spur every medical man to better effort. It contains proof beyond question that well ordered study and planning will accomplish that which is seemingly impossible. The average reader will be amazed to know that at the Mayo Clinic there are 27 operating rooms, and that "Operating is not necessarily the only work performed, for, in 1924, of the 60,063 cases passing through the clinic, operations were performed upon only 23,628. In passing it

would be unfaithful to duty not to record the far reaching influence of the original "Dr. Mayo," father of Wm. J. and Charles. There is no question that it was his fine influence and vision of future needs that has made The Mayo Clnic one of the most useful centers of the world today. He is depicted as a physician who drove fine horses, kept rigid office hours, allowing only important emergencies to interfere with his routine, enjoyed a very large consulting practice, and was one of the pioneers in abdominal-surgery in America, performing his first successful laparotomy for ovarian tumor in 1871, and in the next thirteen years performing thirty-six similar operations. The volume is an accurate record in sequence of the important transitions of the Clinic.

"Diseases of Women," by Harry Sturgeon Crossen: C. V. Mosby Company, 1926. $11.

This is one of the most useful and popular books on the diseases of women that has ever been edited. Though there are many books on this subject, none have continued to receive such popularity from its first to its present edition during the last twenty years.

This book is well written and extensively illustrated and contains much practical information to all doctors, and as the author says, it is a book devoted to the diagnosis and treatment of those diseases encountered both at the bedside and in the office by the general practitioner. This policy has been adhered to in all the subjects of the book. While written for the general practitioner the specialist will find it a book of great value.—*C. E. White.*

HEALTH SUPERVISION

Health Supervision and Medical Inspection of Schools, by Thomas D. Wood, M. D., College Physician, Adviser in Health Education, and Professor of Physical Education, Teachers College, Columbia University, and Hugh G. Rowell, M. D., Physician to the Horace Mann Schools, Lecturer and Assistant Physician, Teachers College, Columbia University. Octavo of 637 pages, with 243 illustrations. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, $7.50 net.

This volume is intended to meet the requirements and needs of thorough, practical and comprehensive supervision of health supervision as demanded by recent modern developments of prevention, treatment and control of any and all things detrimental to the general welfare of the child of school age. It is significant that almost the first thing considered in a history of school supervision, which begins with the first recorded effort in Sweeden in 1830-40, when school doctors were appointed for certain training schools, down to 1926 when Great Britain originated a plan for insurance against absence from school for illness or accident and Argentina planned to have 75 school health visitors, one for each 3,000 pupils, as well as other advanced steps tending to improve conditions of school children generally.

COMMITTEES FOR ANNUAL MEETING

MUSKOGEE, MAY 4, 5, 6, 1927

General Chairman	J. Hutchings White
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Exhibits—Meeting Places	C. A. Thompson
Women's Auxiliary	Mrs. H. C. Rogers
Medical Reserve Corps Banquet	Hugh Scott, S. E. Mitchell and C. A. Thompson

Clinics will be held at Oklahoma Baptist and U. S. Veterans' Hospitals, mornings of May 4 and 5.

Hotel Headquarters	Hotel Severs
All Exhibits and Scientific Sections	Masonic Temple

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Meeting Place, 1927, Muskogee.

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